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IS 14247 (1995): Automotive vehicles - Exterior protection for passenger car - Performance requirements [TED 6: Automotive Body, Chassis, Accessories and Garage Equipments]



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भारतीय मानक

(Reaffirmed 2000)

स्वचल वाहन — सवारी कार के लिए बाहरी
संरक्षण — कार्यकारिता अपेक्षाएं

Indian Standard

**AUTOMOTIVE VEHICLES — EXTERIOR
PROTECTION FOR PASSENGER CAR —
PERFORMANCE REQUIREMENTS**

UDC 629.113.013.23

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BUREAU OF INDIAN STANDARDS
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NEW DELHI 110002

FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards, after the draft finalized by the Automotive Body and Chassis Sectional Committee had been approved by the Transport Engineering Division Council.

Exterior protecting devices are safety accessories for safeguarding items such as radiators, lighting and signalling devices, reflex reflector, etc, from damages due to collisions with stationary or moving objects on the road. 'Bumpers' are one such device. Guard rails are additional fittings used in the front side by some drivers. 'Mesh' type of protection devices are also being used.

In this Indian Standard however the performance requirements and test methods against impact load for bumper are being outlined.

In preparation of this standard considerable assistance has been derived from ISO 2958-1973 'Road vehicles — Exterior protection for passenger cars,' FRM 581 'Bumper' issued by Federal Regulations for Transportation NHTSA, DOT, USA and Safety Standard SS 36, issued by ARAI, Pune.

The committee responsible for the preparation of this standard is given in Annex A.

In reporting the results of a test or analysis made in accordance with this standard, if the final value, observed or calculated, is to be rounded off, it shall be done in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'.

Indian Standard

AUTOMOTIVE VEHICLES — EXTERIOR PROTECTION FOR PASSENGER CAR — PERFORMANCE REQUIREMENTS

1 SCOPE

1.1 This standard specifies the performance requirements of exterior protection devices of vehicle such as bumpers to provide safety at the front and rear of the vehicle, to certain mechanical elements and for lighting and signalling devices in cases of collision at low speed during parking manoeuvres.

2 REFERENCES

2.1 The following Indian Standards are necessary adjuncts to this standard:

<i>IS No.</i>	<i>Title</i>
9211 : 1979	Denominations and definitions of weights of road vehicles
9435 : 1980	Terms and definitions relating to dimensions of road vehicles
12218 : 1987	Method of measurement of approach, departure and ramp angles of automotive vehicles

3 TERMINOLOGY

3.1 Exterior Protection

Exterior protection are those protective devices, which are essentially elements located at the front and rear ends of vehicles and designed in such a way as to allow contracts and small shocks to occur without causing any serious damage.

These devices may be fixed at a common reference height, taking into account safety requirements and all aspects of vehicle design.

3.2 Approach Angle, Departure Angle and Ramp Angle

For the purpose of definitions of approach angle, departure angle and ramp angle reference shall be as per IS 12218 : 1987.

3.3 Vehicle Kerb Weight

The definitions of vehicle kerb weight shall be as per IS 9211 : 1979.

3.4 Reference Height

The height above the ground at which the vehicle shall embody sufficient protective devices, both at kerb load and design load.

This reference height is that of the horizontal plane passing through the reference line of the test device described in 5.1 and IS 9435 : 1980.

4 GENERAL CONDITIONS

4.1 The bumper and its mounting shall be of sufficient strength to withstand the load established by the weight of fully loaded vehicle at the jacking point without noticeable permanent set.

4.2 The components of the bumper shall be so designed that all rigid surfaces facing outwards have a minimum radius of curvature of 2.5 mm.

5 IMPACT TEST

5.1 Test Equipment

5.1.1 The effective mass of the test device shall equal to the vehicle kerb mass. A test device of different mass may be used as different impact speeds provided that it may be shown that the results are equivalent.

5.1.1.1 The pendulum shaft shall be adjustable so that the weight is approximately centered on the bumper contact point.

5.1.1.2 A suitable pull back and release mechanism arranged so that there is no delay in the swing of the pendulum.

5.1.1.3 Pendulum weight shall be equipped with an impact surface.

5.1.2 Impact Surface

A flat, solid hardwood vertical surface 600 mm wide, minimum 50 mm thick and minimum 460 mm high. The centre of impact surface shall be at the centre of gravity of the pendulum weight and 90° to the direction of travel.

5.1.3 Angleometer for measuring the swing angle of the pendulum.

5.2 Test Procedure

5.2.1 The test vehicle shall be weighed to the kerb weight of the heaviest model of a particular design and equipped with production options weighing 2 kg or more or equivalent weight and a passenger load of 68 ± 7 kg.

5.2.2 Check all the headlamps for their proper functioning.

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ANNEX A
(Foreword)
COMMITTEE COMPOSITION

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